

A  
T R E A T I S E  
ON THE  
REGULAR, IRREGULAR, ATONIC, AND FLYING  
G O U T:

CONTAINING  
MANY NEW REFLECTIONS ON ITS CAUSES, AND MA-  
NAGEMENT UNDER VARIOUS CIRCUMSTANCES AND  
CONSTITUTIONS.

WITH  
THE EXCELLENT EFFECTS  
OF  
THE MURIATIC ACID  
IN THE RELIEF OF THAT DISORDER.

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## INTRODUCTION.

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THE disorder called *Arthritis*, or Gout, has been the torment of the affluent in all ages: physicians, regular and irregular, visionists, and projectors, have delivered a multiplicity of doctrines and modes of treatment; but with what success, let the reflecting physician and the afflicted determine. Medicine has made little or no progress towards a radical cure for this inveterate distemper: nor has any consistent mode of treatment been established to alleviate with safety the symptoms, as they occur in different constitutions. If a survey be made of the numerous writings on the gout, it would be thought, the subject was exhausted: if their utility be scrutinised, it will be found that little has been said to answer any very important purposes in the cure. The reasons are, in some measure,

a 2

measure, obvious. Whoever held out the ensign of victory over this formidable enemy, however absurd the means, met with warm attention from the afflicted; whoever pointed out the strong posts of this inimical disturber of human tranquillity, the difficulty of attack, and the probability of defeat, was sure of being disregarded. The former includes the innumerable host of deluding empirics; the latter, of the learned, experienced, and skilful regulars, in all ages. The encouragement empiricism has ever met with, has been an inducement to fresh adventurers to exercise their deceptions on the afflicted; the discouragement regular physicians experienced for their integrity, has, I am induced to believe, rendered them less ardent in attempting new discoveries, even to alleviate the miserable symptoms. When gouty patients were found unjustly suspicious, or expected impossibilities, physicians appear to have been cautious or negligent in exerting their faculties in their relief. Confidence in the patient was as essential, as skill in the physician: the arthritics, not without some reason, had little or no confidence in physic;

fic ; therefore they have been often left to the mercenary delusions of empiricism.

Having many years ago reflected on the obstinacy of the disorder, the failure of physic in its relief, under the guidance of the most celebrated physicians, I rested satisfied that little could be added productive of any essential benefit. An accidental circumstance, however, which will be fully explained hereafter, led me to reconsider this disorder, so justly called the *opprobrium medicorum*, and I am inclined now to think that the subsequent observations may be worthy of attention. It is acknowledged the subject has ever been surrounded with obscurity ; therefore indulgence is claimed, and, no doubt, will be granted, by the candid in the profession, equal to the difficulty of the investigation attempted.

The gout has been known in the remotest ages of antiquity, and considered difficult or impossible to cure. The *Greek* father of medicine, *Hippocrates*, above two thousand years ago, says, what has been a melancholy truth in all succeeding times:

“ But

“ But concerning the afflicted with the  
 “ gout, the following may be pronounced :  
 “ those, who in old age have indurated  
 “ *tophi*, or *callosities* of the *joints*, or endure  
 “ a *miserable life* with *costiveness*, all these,  
 “ certainly, in my opinion, cannot be cured  
 “ by human art \*.”

The excellent and elegant classical writer, *Celsus*, who flourished at *Rome*, some centuries posterior to *Hippocrates*, in the Augustan age, or soon after, says, “ Some by  
 “ drinking *asses milk* have prevented the  
 “ gout from returning. Others by ab-  
 “ staining from *wine*, *mulse*, and *venery*  
 “ for a year have rendered themselves se-  
 “ cure from it all their lives. This me-  
 “ thod is to be pursued after the cessation  
 “ of the first painful attack †.”

The assertions of *Hippocrates*, under the circumstances described, of the incurableness of the disorder, have been, are, and,

\* *Hippocrat. lib. ii. Prædict. sect. ii. p. 92. Edit. Foesii, 1657.*

† *Celsus de Medicina, lib. iv. cap. 23. — Pliny recommends a milk diet, lib. xxviii. cap. 9.*



most probably, for ever, will continue strictly true.

The method of cure recommended by *Celsus*, in which, *wine*, *venery*, and *mulse* are to be abstained from, and *asses milk* drank for a time, has an apparent probability of success; after the cessation of the first attack, as he expresses himself—*idque utique post primum dolorem servandum est, etiamsi quievit* \*.

This mode of treatment, however, cannot succeed, according to my own experience, except under the following conditions :

I. That the gout be not hereditary †.

II. That

\* *Celsus* recommends nitrous baths in gouty fits.

† This has been disputed by some, who I believe never saw much practice, therefore incompetent judges; but there are many proofs of *hereditary gout*. — *Aurelianus* says, (*De morbis acutis & chronicis*, lib. v. cap. 11., before the time of *Galen*, who was physician to *Commodus*, and other emperors) “ It seems to many of the ancient physicians also, “ that the gout is transferred in a *regular hereditary course* “ by the semen, and for this very reason invades succeeding “ generations, which we have shewn, chiefly in *the books of answers*: (these books have not reached our times.) It “ is likewise proved to frequent some particular countries, “ as *Caria*, and the neighbourhood of *Alexandria* in *Egypt*.”

The

II. That the patient has not drank wine from infancy, nor been guilty of great excesses in food or wines at school, college, or afterwards through life.

III. That the viscera be sound, and no material disease has injured either the natural, vital, or animal functions.

IV. That the gout be recent.

V. That the first attack be not late in life, and the patient no spirit drinker.

VI. That the patient can suffer the

The same author says, "The antecedent causes are various, as *free drinking, sharp cold, crudities, too much venery, immoderate exercise, or a sudden cessation of accustomed exercises.*"

*Alpinus*, the modern, who lived some years in Egypt, says, "Arthritici multi ibi existunt, ex multis humoribus crudis." Lib. i. cap. 57. *Medicina Ægyptiorum Alpini.*

There are many instances recorded of hereditary gout. In *Miscellanea Curiosa* for the year 1677, p. 21, vide *Observat. Simonis Schultzei*, where are some proofs. *Boerhaave*, aphor. 1255. *Compendium Medicinæ Zuingueri*, p. 478. *De Generatione Morborum* of the great *Hoffman*, sect. i. cap. 10. *Jüngben Praxis Medica*, p. 78. *Observationes*, lib. ii. p. 506. *Plateri. Tractatus de Arthritide Sydenhami, &c. &c.*

I attended a boy who laboured under a regular fit of the gout, who was but five years old, and whose father died of that disorder at an early time of life. I have seen other instances of *hereditary gout*.

changes



changes of diet without risking the production of dropfy, debility, or more dangerous diseases than the gout.

Without all, or most of these conditions, it will be vain and irrational to expect a radical cure of the gout from a *milk diet*.—Arthritics, who have passed through life liberally, sink under such a regimen, and the hazard of injury is soon discovered to be greater than the prospects of cure. If a *milk diet* had been so efficacious as represented, its reputation must have been permanently established in a period of two thousand years; but as the reverse is the fact, little is to be expected from this ancient prescription, except in very rare instances.

Numerous imitators of antiquity, either from credulity or out of complaisance, for it could never be from conviction, have continued to recommend a *milk diet* in their writings as a certain cure for arthritics.—In *Miscellanæ Curiosæ*, in Sydenham, Boerhaave, Hoffman, Cbyene, cum multis auctoribus aliis, may be found this lacteal regimen

men advised as a sovereign remedy in the gout.

One practical observation need only be advanced on this doctrine: whoever drinks *milk* as a cure for the gout, should relinquish all the pleasures of the table, wines, spirits, and fermented liquors: how long *arthritics* will pursue such a course, experienced physicians may easily imagine. To change the accustomed free diet late in life for meagre cold foods is an experiment *replete with danger*, and the gouty are, in general, too sensible to acquiesce in so precarious or preposterous a project.

A late writer, the learned *Cocchi*, pursues a middle course, which is certainly more rational; but he has had but few followers, though many admirers. “The gout,” says this writer, “can be *prevented* or *cur-* “*ed*, or very much *mitigated*, by a *milk diet* “mixed with *plenty* of vegetables, and a “*spare animal food*. Not only the gout and “the diseases of the joints may be remov- “ed, or greatly alleviated by the *Phytha-* “*gorean diet*, but in general all the evils  
“ arising

“ arising from too great a vigour of the  
“ solids\*.”

It should be remarked, that he wrote and lived in Italy, a country where vegetables are much eaten, and where they are more nutritious than in our island: but I do not recollect in all my travels through Italy or other countries, ever meeting with one person, who had been radically cured of the gout by the *Pythagorean diet*, so extolled by *Cocchi*; nor by abstinence from *mulse*, *wine* and *venery*; nor have I ever seen any gouty physician in England, or any other country, follow the *milk regimen*, &c., or risk the injury of his own constitution on even the authority of *Celsus*, *Boerhaave*, *Hoffman*, *Cocchi*, or any other medical writer, ancient or modern. It may be inferred from this circumstance, that *milk* never *did*, *can*, nor *will*, cure the gout, except in rare instances, and under the conditions already premised †.

With

\* *Antonio Cocchi del vitto Pitagorico*, p. 63 and 64.

† *Limburgi ad Llanham degit Dominus de Wallendorf*, jam atrocissimis doloribus podagricis ex cruciatus, qui tandem cura lactis, et optimâ observatâ recuperavit sanitatem.—

With regard to a certain and radical cure by any diet, it is considered next to impossible, as the conditions premised are so seldom found in practice. It is but just, however, to say, that *much* advantage may be gained by *proper regimen* and judicious medicine. 'The fits' may be rendered more distant; the habit may be fortified, so as to receive the attack with less injury: but whoever expects a perfect cure by *low diet* and *milk*, or by any other confined plan, unless the disorder be recent and all the viscera sound, will most assuredly be disappointed. These facts, by long experience and attentive observations on various projects of diet, are fully confirmed.

From a serious examination of all that has been attempted by ancients or moderns, regulars or irregulars, who have amused arthritics at different periods, as likewise from minutely examining the causes, effects, and nature of the disease itself, it is

Single instances may be produced, and they have been often prematurely published, when afterward the unfortunate patients have returns of the disorder most distressing, which my own experience confirms.

declared, in general, *incurable*. All that is intended to be advanced in the following treatise is to ascertain the causes of the gout, and to palliate with safety, and by judicious practice, this horrid distemper, under various situations.

The objections advanced concerning *milk diet* in all cases, not to mention abstaining from *wine* and *venery*, which few will agree to, are equally applicable to every other *narrow* project of diet, or any particular medicine, regular or empirical. The administration of diet, judiciously adapted to the habit of different patients, merits commendation; but the dangerous prejudices, adopted at different periods, of prescribing to different and even opposite constitutions exactly *one plan of cure or diet*, originating perhaps, from a *single instance* of success, demands the severest censure. The misfortunes attending such infatuations, such temporary delusions, the afflicted in the gout and chronic complaints have often had severe reasons to lament, and may now pronounce with justice, as the poet Ovid did



did formerly, above eighteen hundred years since :

*Solvere nodosam nescit medicina podagram* \*.

After what is premised, the scope and intention of the present treatise may be in-

\* The following examples of longevity, by diet, if to be depended on, are curious and interesting :

Dr. Cramer, first physician of the Imperial army in Hungary, met in Walachia men one hundred and ninety years old, and a great many of upwards of one hundred, who were sufficiently strong to follow the plough and perform their daily labour in husbandry. He first thought that the air, water, or some other particulars of the place, caused this unusual longevity ; but finding the Turks in the same valley, and situated by the same river, lived only to the common age, as likewise the Imperialists on the higher part of the river, he minutely inquired into the causes. He found these long-lived people were a particular sect of Greek Christians, called Raytzes, who, by their tenets, were obliged to keep fast one day in the week ; they washed and bathed very often ; abstained from all animal food, and all spirituous and fermented liquors. They are content with bread of a Turkish corn ; they eat fruits and vegetables in season ; their drink is water out of the Danube ; they daily eat four crout (*brassica muratica*) in great quantity, and also sourish broths †.

This diet, so salutary to the people who practise it, cannot be pursued by others, unless it be commenced in infancy ; but some part might be received into the daily aliment of most persons with safety, and not without advantage.

† *Commercium Literar. Noricum*, 1740, p. 21.



roduced, commencing with the history of a *new discovery* very efficacious in alleviating the gout during the paroxysm.

About twelve years ago, a gentleman of rank, much afflicted with the gout, feelingly lamented, that physicians in England were greatly embarrassed in safely alleviating the exquisite pains during the paroxysm, and asserted, that the most excellent effects had been experienced by himself and many of the French nobility, from the use of a bath and cataplasm under the direction of a person, who did not pretend to possess medical knowledge\*.

During my attendance on the gentleman in a fit of the gout, being struck with these encomiums on the *Parisian* remedy, I determined to purchase some, and make trials of its utility. I had reasons to be satisfied. The authority and testimonies, likewise, in favor of the baths, &c., were so respectable, and the instances of success,

\* The cataplasm was composed of duck weed and a liquid, which seemed to be prepared antimony in common water, or some sulphureous stinking similar preparation.

as represented to me, so numerous and interesting, that, animated with the prospect of alleviating human misery, I determined to introduce their use, if possible, in this country.

After repeated trials of the beneficial effects of this French composition, owing to the uncertainty of procuring it, and its exorbitant price, I was induced to attempt the discovery of so valuable an acquisition, and succeeded: it proved to be the *muria-tic acid* a little disguised\*.

The following sheets will contain its analysis, the mode of preparing the baths, their use, and alleviating effects; for it is not ushered to the public as a *cure* for the gout, though, perhaps, it approaches nearer to that character than any remedy ever yet discovered.

\* The price was a *louis d'or*, or nearly a guinea the phial. The original author, in a letter I lately saw to the gentleman who first acquainted me with the remedy, says, he has *cured* the gout by bathing once or twice a month, and is certain of rendering the fits more distant and safer to the constitution: he has used the remedy above twenty years amongst divers persons in France. The best pans for bathing are of Mr. Wedgwood's manufactory.

It

It is not merely to introduce this remedy, that this treatise is written, but to deliver some new observations and improvements, the result of long experience, in the management of the gout under various circumstances and constitutions, and to abolish, if possible, all *confined practice* in a disorder so various in its attacks, violence, and effects. This part, whether the baths be approved of, or not, it is presumed, may be found useful to the afflicted, and be a means of establishing a consistent practice, if not in the *cure*, for that is considered generally *improbable*, yet in the alleviation of that painful enemy to human happiness.

The definition, symptoms, and description of the *regular, irregular, atonic, and flying gout*, are briefly delivered. What has hitherto been attempted in the cure is next recited with animadversions on all the doctrines and practices.

The real causes of the gout, from a variety of facts and reasonings on the state of the blood, &c., are next stated; in which is an attempt to account for the action of  
c the

the *muriatic acid* baths; in mitigating the pains during the paroxysm, and sometimes enabling patients to walk in a few days \*.

Lastly, is considered, the necessary treatment of the gout under all its calamitous symptoms, and in various constitutions; as the pallid, the florid, the corpulent, the lean, the irritable or non-irritable, the young, the aged; the recent and inveterate gout, &c. &c.

It was impossible, in this part, to give rules adequate to all constitutions and circumstances; for human character varies *ad infinitum*, and it requires no small degree of penetration to distinguish this diversity in nature, so as to apply it skilfully in the art of medicine; but physicians, who study it most and vary their practice accordingly, will be most successful in curing diseases.

*Saville Row,*

October 8, 1792.

\* I by no means agree with some modern hypotheses, which would declare that morbid changes in the blood and fluids are not the causes of many disorders. I pledge myself to prove the contrary, upon such solid grounds, and by such convincing arguments, as to leave the subject scarce disputable.

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A

TREATISE

ON THE

GOUT.

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THE Gout is a violent, painful disorder, which periodically attacks the membranous and other parts of the joints \*.

*Symptoms.*

To enumerate all the sensations that accompany this painful disease, as they happen to different patients, would enlarge this treatise beyond its intended limits;

\* Arthritis, vel *Morbus Articularis*, or what we call the Gout, is derived from ἄρθρον, *articulus*, or joint. The Gout may be strictly defined to be a disease of the articulations, which distinguishes it from the rheumatism, which is a disorder of the *tela cellulosa* of the carnos part of the muscles between the junctures, though sometimes confounded with the Gout.

the general symptoms, therefore, shall be concisely delivered.

Previous to a fit or paroxysm of the gout, patients, more or less, perceive loss of appetite, flatulency, a bitter taste in the mouth, nausea, and sometimes vomitings; acid eructations; heartburn, as it is called; costiveness, purgings, thirst, unusual heats, and cold shiverings; coldness in the extremities, slight fevers, flushings, pains in the head, drowsiness after meals, lassitude, dejection of spirits, restlessness, mental perturbation, irascibility on trifling occasions, anxiety, timidity, and, in short, the whole class of nervous affections\*.

When the fit commences, an acute, violent pain is felt in the joint of the great toe, with throbbing and heat; the least motion, and often light pressure, cause exquisite torture: these are succeeded by immobility of the juncture, swelling, redness, and a shining skin; feverish symptoms, as quickened pulse, and thirst accompany all the other evils.

\* These are numerous, as the book on Female, Nervous Diseases, &c., fully proves.

These distressing sensations continue, with temporary remissions, for a longer or shorter period. The feet are generally attacked alternately, and all the symptoms are more or less violent, according to the constitutions of patients and the violence of the attack; and they have more or less of these affections in proportion as patients be strong and vigorous, or infirm and debilitated, or as the disorder has ravaged short or long in the constitution; for it is scarcely similar in any two athritics, either with regard to violence or duration. After the paroxysm has continued, with various changes and short temporary remissions, for days or weeks, the urine commonly deposits a lateritious sediment of calcareous particles, or is very turbid. The pain and fits then gradually become weaker and terminate, leaving the afflicted lame and debilitated. This species of gouty fit is called *regular*, though nothing can be more *irregular*, either as to the mildness or fury of the attack, or its continuance in different habits.

After the fit the patient gradually has an apparent return of good health for a longer or shorter period. In autumn, winter, or spring seasons, however, the same tragedy is re-acted, sooner or later, and every succeeding fit renders the patient weaker and less able to support fresh attacks.

*Irregular fits* of the gout do not terminate in the antecedent manner, but ravage in the constitution a much longer period, seize on various other parts beside the feet, as the hands, elbows, knees, ancles, hip, loins, &c., &c.; nor is the patient so long free from the paroxysm, but is always in jeopardy of its returning, without being always able to account for the cause, except knowing the disease is in the constitution from former fits.

The third species is called an *atonic* gout. This sometimes may afflict patients a long time before they know that any such disorder exists in the habit. It happens in delicate constitutions, whose moving powers are not sufficiently strong to produce a fit of the Gout, or repel the latent enemy to the feet; for it cannot be asserted patients have

have the Gout until a fit regular or irregular has unequivocally demonstrated the disease.

The symptoms mentioned as previous to the fit of the Gout may give some suspicion of the disorder; but the weakness of the habit may be incapable of producing a fit. This may be considered one species of the *atonic Gout*, but not always discoverable.

The most common species of the *atonic Gout* happens in a state of the body which follows many and repeated severe fits of that merciless disorder: the whole body is greatly debilitated; the mind nervous and irritable; the natural, vital, and animal functions all more or less affected; the digestion and chylication perverted from diseased viscera; the stomach and intestines, in a manner, lose their functions; the secretions and excretions are impeded; the circulation, respiration, and muscular powers, enfeebled; with cough, difficulty of breathing, cramps, fainting, intermitting pulse; chalkstones, or ulcers about the toes, difficult and tedious of cure; the  
nervous

nervous and sensitive powers are extremely irritated, or rendered torpid; in the former, extreme mental misery; in the latter, dullness, loss of memory, drowsiness, lethargy, and all the forerunners of convulsions, apoplexy, palsy, or death.

To the symptoms already represented might be added a thousand more; for every part and every function of the human body may be more or less affected; and it is often impossible to foresee, by present symptoms, future consequences.

To the former species may be added what has been nominated *athritis vaga*, or the vague or flying gout, which now attacks one part, then another, and this instantaneously; as from the stomach to the head, lungs, diaphragm, feet, hands, loins, hips, kidneys, bladder; shifting from one part to another with great rapidity. Nothing but the modern knowledge of the universal connection of the *tela cellulosa*, by means of its cellular structure, and its importance in the human body, can account for the sudden transition of the gouty particles from one part to another; but a physiological

I



gical comprehension of this constituent part of the human frame solves many difficulties unknown to our ancestors, and to all who have not deeply studied modern physiology and pneumatics. Neither the causes nor dreadful effects of the gout are so obscure as many have imagined; though the cure at present may be surrounded with many, and some insuperable, difficulties.

### *Causes of the Gout.*

The remote or predisposing causes of the gout are :

- I. Hereditary disease.
- II. High living and over exercise, succeeded by inactivity. The gout attacks chiefly those who freely drink wine, cyder, punch, &c.; eat much animal food: it is seldom found amongst the poor, or drinkers of malt liquor.
- III. Overbundance of wine and venery. *Bacchus pater, Venus mater, ira obstetrix arthritidis.*
- IV. Violent or accustomed exercises relinquished, as hunting, shooting, walking, &c. &c.

v. The

v. The neglect of proper or accustomed evacuations; impeded perspiration and coſtivenefs contribute much to the gout, and preſerve it in the conſtitution.

vi. Mental inquietude cauſing an ill digeſtion in the ſtomach, from which a vitiated chyle, and of courſe a depraved and acrimonious ſtate of the blood.

vii. Frequent colds in the extremities, particularly in the hands and feet. The omiſſion of warm cloathing, agreeably to the changes of the weather, eſpecially in ſpring, autumn, or winter.

The more *immediate* cauſes of the Gout are :

i. Cold air in ſpring, autumn, or winter, cloſing the pores of the ſkin, particularly of the legs and feet.

ii. A redundance of calcareous particles and coagulable lymph circulating in the blood, obſtructing or tardily paſſing through the minute cells or capillary veſſels.

iii. An increaſe of the arterial ſyſtem, to force on the morbid gouty blood, too tardily circulating in the minute veſſels, or aërial particles

particles partially obstructed in the minutest cellular structure of the *tela cellulosa*.

iv. Distensions of the minute vessels, or a deposition of the morbid particles of the blood, in the minute cells of the *tela cellulosa* causing inflammation, pain, and tumor.

v. The incapacity of the distended minute venal system in conveying back the depraved blood, *in tempore*, brought by the arteries. Hence local inflammation, pain, and swellings.

vi. The lymphatics and minute veins being deprived of their full natural power of absorption, or reconveyance of the fluids brought into the minute cells of the *tela cellulosa*, the distentions and swellings increase; nerves suffer unusual stretching, or are irritated by the acrimony of the fluids, a violent, acute sensation of pain is the consequence. These causes, both remote and more immediate, will be comprehended by those who well understand anatomy and physiology, who have seriously considered the importance of the *tela cellulosa* in the whole structure of the human body,

as well as the offices of the arteries, veins, lymphatics, nerves, muscles, &c. &c.

That cold weather closing up the pores of the skin is an exciting cause of the gout, the seasons of the year, in which it is most common, fully shew; that a superabundance of gluten, is a consequence of cold; blood drawn from pleuritic and rheumatic patients, demonstrates. That the offending particles in a fit of the gout, are calcareous and coagulable lymph, is clearly evinced by the following facts :

I. Blood taken from gouty patients has generally a superabundance of gelatinous lymph \*, even though the red particles, which is generally the case, cohere less than in sound health. During, or even in the intervals of, the fit, blood drawn from arthritics, in different degrees, have this appearance.

II. In some, the calcareous or earthy particles are evidently mixed with the buffy appearance, called the inflammatory crust, on the surface of the blood, especially if the

\* I have used the terms gluten, gelatinous, and coagulable lymph promiscuously.

blood issues from a large orifice in a full stream, and the person has been many years afflicted with the gout.

III. The matter distending the diseased parts, causing the pain in gouts of many years continuance; if extravasated under the skin, forms, what are called chalk stones; with these some persons can write as with chalk.

IV. If the offending matter should form itself into an abscess, and break through the skin about the toes or feet, the discharge is evidently composed of calcareous particles, united with mucus or coagulable lymph. A great quantity of such particles from many gouty subjects, I have in my possession, which evidently proves the fact.

V. If this matter be preserved, it soon hardens in the atmospheric air, forming a calculus or stony substance similar in its constituent particles to stony concretions in the urinary bladder, gall bladder, &c. though not possessing equal coherence\*.

VI. The

\* I have a collection of these particles; some in a state nearly approaching to powder, or easily reducible to powder;



VI. The perspirable matter passing through the pores of the skin and hands of some gouty persons very long afflicted, after the more volatile parts of the perspiration fly off in vapour, the earthy parts precipitate, and appear on the surface like powdered chalk; if such arthritics lay their hands upon a table, when in a state of perspiration, a sketch of the hand, as though drawn with white chalk, remains depicted. The same powder may be often scraped off the surface of the skin in considerable quantities.

VII. Similar calcareous particles issue through the arterial pores of the skin in different parts of the body, with the perspirable fluid; but this circumstance is only particular to those gouty habits who have been very long afflicted with the disease, and whose whole mass of blood seems much contaminated with earthy particles\*.

VIII. Whilst

der; others cohere more firmly, and of course are harder and denser, having a greater portion of gluten.

\* The insensible perspiration is always passing through the minute arteries that terminate in the skin, and in all internal



VIII. Whilst insensible and sensible perspiration in the warm or mild seasons of the year pass through the external arterial pores of the skin, freely, by the actions of the arteries, the fit of the gout, in general, is dormant; but when this perspirable matter or vaporous exhalations meet opposition in their passage through the external arterial pores, either from cold or through a diminished force in the heart and arteries, from the vessels being overloaded, from debility in the circulating powers; or any accidental frigefacting or chilling cause; then stomach complaints, anxiety, nausea, shiverings, lassitude, mental torpidity, or irritation, and all the approaching symptoms of the gouty fit, commence, and a painful, long, or short fit of the gout succeeds, in proportion to the quantity of accumulated gouty matter, which may at the time circulate in the blood or ravage in the constitution\*.

## IX. The

internal surfaces, in the form of a vapour: if the perspiration be increased, and appears in drops, it is called *svocat*.

\* It has been clearly proved, by the evidence of the senses, that even the calcareous or chalky particles are exhaled

IX. The calcareous matter, after the febrile exacerbation or gouty heat, issues in great abundance, frequently with the urine, white, brownish, or pink coloured, at different times during the fits of the gout, and, in proportion to its quantity, proportionably mitigates the symptoms.— This is another corroborating proof, that calcareous matter in too great an abundance is a principal cause, or constantly an attendant of the gout; because its copious discharge alleviates the disorder, and unburthens the constitution of the apparent cause of its most distressing and painful symptoms\*.

x. In

exhaled and pass through the pores of the skin of many gouty patients in the form of air or vapour, which, when chilled or condensed by the atmospheric air, are proved to be earthy particles; and in all perspirable fluid there are terrene particles.

\* Similar particles are deposited in fits of the gravel, and there seems a great affinity in the causes of the gout and gravel; the matter which is discharged in the latter might, if retained in the blood, produce the gout, or *vice versa*, which experience has observed. In one instance of an elderly gentleman I attended many years ago, who was severely afflicted with a most inveterate gout, many large calcareous concretions, not gall stones, were evacuated with his excrement during the paroxysm. These stony substances

x. In the dissections of gouty feet, the calcareous depositions, or what are nominated chalk stones, are frequently discovered about the joints of the toes, and the same are found in the fingers. These particles, thus extravasated, may be called the effects rather than the causes of the gout, by some; but it should be observed, that no such effects are discoverable in the feet or hands of persons *not gouty*, nor can such a deposition be found in any limbs, but in those where the calcareous particles pre-existed in the habit; nor in any who have not suffered repeated and severe fits of the gout: therefore, though the effects may appear in the extremities, yet the causes of those effects were previously in the constitution.

stances I have preserved. Physicians, who know the connection between the internal surface of intestines and external pores of the skin, will easily perceive that the extreme openings of minute arteries on these surfaces convey and evacuate frequently noxious or irritating particles from the constitution; on the surface of the skin the mouths of the arteries convey chalky particles, which become powder in the open air: the surface of the intestines have similar openings, called exhalent arteries. Colds and fevers are frequently solved either by perspiration or critical purgings; gout by the evacuation of calcareous matter.

XI. From all these facts it appears that a superabundance of *coagulable lymph*, or mucus united with calcareous or earthy particles, circulating in the blood, are present in fits of the gout. It should be remarked, however, that in the recent gout, or first gouty paroxysms, the calcareous particles are small in proportion to the superabundance of coagulable lymph \*; whereas, when the disorder has ravaged many years, the earthy or calcareous particles predominate in various degrees; which accounts for the absence of chalk stones in recent, and the appearance of them after a great number of years affliction in this painful disorder. From which circumstances, it seems a very probable and just conclusion, that the calcareous gouty particles, already in the body, gradually attract those of their own nature, and after the seeds of the gout are sown, or created in the habit, unless the patient thoroughly change his usual diet; year after year the calcareous particles in-

\* In rheumatic blood the buffy appearance of the blood is evident from bleeding, and this is perceived in fits of the rheumatism, and in the intervals, though, perhaps, in the latter, in a less degree.

crease and the symptoms are more and more grievous; the body becomes debilitated, and less able to resist the cruel enemy, until at last, worn down by repeated painful paroxysms, anxious watchings, and mental perturbations, the irritating gouty matter attacks some natural, animal, or vital function, fixing on some noble and important part, instead of the extremities, which is called *misplaced gout*, and ends in the fatal dissolution of the afflicted patient\*.

Why have gouty persons a superabundance of earthy or calcareous particles and gelatinous lymph in their blood?

The solution of this question is replete with difficulty, but the discussion shall be attempted. Exclusive of a free animal diet, vinous and spirituous drinks, which cer-

\* The parts on which the gouty matter fixes to prove fatal are the membranes of the brain; hence apoplexy — the diaphragm or lungs; hence difficulty of breathing and suffocation — the stomach; hence vomitings, syncope, death.



tainly are productive of the gout, perhaps by exciting heat and over vascular action, out of one hundred arthritic patients, ninety will be found subject either to costiveness from a *deficiency of bile*, or a dry skin.— From these sources may be discovered the origin of a superabundance of calcareous or earthy particles in the blood.

In order to explain how costiveness, or a dry skin, may generate a redundancy of earthy particles in the blood, it will be necessary to direct the mind to consider the changes of food in the intestines, and follow its conversion into chyle; from hence to sanguification, or the mixture of nutritious particles of our food with the blood, and the separation of the grosser parts of aliment, their conversion into excrement, and their timely evacuation.

II. To discover the causes of a dry skin, and what particles are, and how retained by the arterial openings externally, or pores of the skin, not being sufficiently pervious to perform salutary perspiration.

These subjects are intended to be treated in a clear manner, though it may happen,



that none but the learned in the profession, or philosophical inquirers, will be able to comprehend the validity of the arguments produced. A previous knowledge of anatomy, physiology, and pathology, being necessary for the purpose; exclusive of long experience and just observations in the practice of medicine.

Several causes, after digestion is performed in the stomach, appear capable of retarding the timely and daily descent of the grosser parts of the aliment, or excrement through the intestines, and of rendering them *clay coloured*\*.

The

\* I. The *deficiency of bile* in the duodenum, or first intestine, where chylification is principally performed.

II. If there be no deficiency of bile, yet the *bile may be vitiated, inert*, and incapable of performing its intended purposes, from diseased liver, from retention of the bile in the gall bladder, or from its undue passage to the duodenum.

III. The dryness of the internal surfaces of the intestines, arising partly from the exhaling arteries being impervious, partially obstructed, or their active vibrating powers may be diminished; the serous fluid, that should pass freely *in habitu*, or form of breathing vapour, is impeded or retained; hence dryness of the intestines and hardened excrements. The astringency of red wine, or contractile power of spirits, may here act as causes.

## The causes of a dry skin, or a want of insensible

iv. A diminished secretion of pancreatic juice may contribute to dry intestines.

v. An impeded secretion of the mucal glands, which are innumerable all through the internal surface of the intestines, or the inspissation of the mucus, if secreted, may cause dry intestines, hardened feces, and retard their passage. The mucus being inspissated, and adhering close to the villous coat of the intestines, may diminish nervous insensibility, so that the excrementitious particles may not act as a stimulus in promoting the descent of the feces, or increasing the peristaltic motion; diminished action in the muscular fibres composing part of the intestinal coats, or diminished sensibility, or want of a due irritability in the nervous powers in the intestines, may retain the excrements by diminishing their peristaltic motion.

vii. Spasmodic contractions in any part of the intestinal canal may likewise act as an impediment, and mould the excrement much smaller than its natural size; which circumstance is often seen by physicians who will view the excrement. The same may happen from tumours in the mesenteric glands, or other parts comprising the intestinal canal.

viii. *Much application to study* will not only injure digestion, but all other functions necessary for health, and in some measure creates costiveness.

ix. A partial or an universal paralytic affection of the muscular coats of the intestines will partially or entirely destroy their peristaltic motion, and prevent the descent or evacuation of excrements.

x. *Pathemata animi*, or passions of the mind, but particularly those of vexation, envy, malice, despondency, despair, all may injure and retard the due performance of the natural functions.

insensible or sensible perspiration may be the following \* :

More

functions. Persons feel the probability of having a laxative watry motion ; some delicacy, company, or cause, prevents the evacuation, and for a time it is neglected. Hours after a motion is procured, but it is often costive ; therefore it seems probable the serum that would have been discharged is absorbed, and carried into the thoracic duct, and thence to the blood.

xI. Improper foods and drinks long continued, astringent wines, spirits, &c., may so injure the stomach and intestines as to diminish greatly their digestive, chylifactive, peristaltic, and excretory powers.

xII. Indolence, or want of due exercises, or the incapability of walking, riding, &c., may give rise to costiveness.

\* I. The neglect of warm, comfortable cloathing in the cold seasons that require it.

II. Cold air itself checking or obstructing the perspirable matter in its passage through the skin will immediately cause an increase of the glutinous parts of the blood, shiverings, heat, &c. ; in many instances, as in pleurisy, true inflammatory fevers, &c., in which *buffy blood*.

III. A debility in the arterial powers to resist the external air, or their inability to force the perspirable matter through the skin, which they actually do in health by their pulsating powers. If the pulsating powers diminish, the perspirable evacuation must be diminished, and the moist vapour, that should, does not pass.

IV. The dryness, hardness, or imperviousness of the external skin, called *cuticula* ; in which case, though the arteries act, the perspirable fluid, which should be discharged, is

More causes of costiveness and a dry skin might be adduced, but the foregoing facts are sufficient. It only remains to give probable reasons, why constipation and a dry skin are productive of gouty calcareous particles in gouty constitutions?

It must be first remarked, that such particles already exist in all persons, who have had the gout; whether created by any of the causes formerly enumerated, or whether the gout be hereditary; chemical attractions explain much on this subject.—*Simile simili gaudet*, and similar particles attract similar, oleous oily, watry water, &c. &c.

In the most vigorous health the perspirable matter contains some *terrene particles*, notwithstanding it seems to issue from the

is impeded in its passage, and comes no farther than the *rete mucofum*, and, instead of being conveyed through the pores, is re-absorbed, and carried back into the constitution. A greater discharge of urine may sometimes, in a great measure, obviate this; but in many debilitated gouty patients the kidneys do not perform their functions: little or no relief may be expected, in such instances, from this quarter; from whence follow dropsies, swelled legs, pitting on pressure, forerunners of a slow but certain death in advanced age, unless cured in the commencement.

body

body in the form of a vapour, or as fine and subtile as air, but air itself has terrene particles, and from the most limpid water likewise they can be separated. For though air and water seem homogeneous fluids, yet they are compounded of various and contradictory parts, as many modern experiments fully prove.

All our foods and drinks contain earthy particles in abundance; animal more than vegetable.

*Chyle*, from which we receive all our nourishment, is the fluid part of our aliment, after digestion is performed in the stomach: it contains earthy particles, which may be easily separated by chymical analysis.

In the grosser parts of our aliment, destined to be evacuated, are abundance of earthy particles.

The whole internal surface of the intestinal canal is furnished with absorbent lacteals; in the small intestines they are most, in the large least numerous.

For obtaining a salubrious chyle, a proper mixture of the bile and pancreatic juice,  
not



not of a vitiated quality or deficient in quantity, is necessary in the *duodenum*, or first intestine.

If the *bile* be diminished in *quantity* or *vitiated* in *quality*, a salubrious chyle cannot be produced, but a depraved, crude chyle is a rational consequence.

For the offices of the bile, which numerous experiments confirm, are to neutralize acidity, to mix the oily with the watry or ferous parts, and, in short, to reduce all viscidities and tenacity of the chyle into a proper degree of fluidity, and to render it fit for absorption to the lacteals.

The last offices of the bile are to stimulate the nervous coats of the intestines, increase their peristaltic motion, and assist in forcing the grosser parts through the large intestines, and urge their evacuation.

If the *bile* be *deficient* in quantity, or vitiated in quality, all or part of these offices are interrupted, a crude chyle is the consequence; for the acetous state of the chyle is not corrected, its tenacity is not attenuated, nor are the oleous particles mixed with the aqueous, nor are the intestines properly



properly stimulated, no bile in the excrements appear, for they are *clay coloured* and *earthy, dry*, and often in *lumps* or *powdery*.

In such crude chyle, there remain, perhaps, much more terrene matter and gluten than would exist if the bile and pancreatic juice performed their destined offices.

Such crude ill prepared chyle, containing a greater quantity of glutinous or terrene parts, being absorbed and conveyed into the blood, an accumulation and superabundance of earthy particles are the consequence.

Costiveness is another probable cause why more earthy particles are absorbed by the lacteals, than where the intestines perform their office freely in the descent and evacuation of the feces. For the grosser parts of the aliments or excrements being retained, as they slowly pass the intestines, *gross terrene particles*, may be absorbed in the larger intestines, and carried to the blood through the *thoracic duct*. The excrementitious parts, no doubt, suffer mutations in their long and tedious passage, if the body be costive, and these mutations

may send off fluid parts in an aërial, volatile, or other form; but, then, in a *viti-ated state*, and if these be received by the lacteals, the whole blood in a length of time becomes vitiated. The effect, however, appearing in a fit of gout may be very remote, and many years may elapse before the patient perceives a diminution of health, or knows he has been nourishing the seeds of that horrid disorder. Add to all these circumstances the probable effects of exercises and inactivity. In the juvenile part of life, though irregularities be indulged by many of the affluent, yet exercises carry off the superabounding humors; but at the time the gout generally appears, a disinclination for juvenile pursuits has introduced indolence and inactivity; yet neither food nor wines are diminished in quantity; plenitude and diseases are the consequences. Horse exercise is often changed for the carriage, through inclination, lameness, or debility. Crudities and impediments in the natural functions are immediately caused and perceived; the gouty humors daily increase. Medicine should, in this moment, exert her efforts to supply the deficiency

ency and curb the growing evil which such changes in exercise produce. But medicine is censured because it cannot force arthritics to alter their usual mode of living, nor effect impossibilities, and the disorder is suffered to ravage without controul. Every fit of the gout is a prelude to its successor, and the arthritics are persuaded to remain contented with the most miserable gout, provided they be secure from the apoplexy, palsy, &c. &c.: for error, or artifice has asserted, that this most excruciating and painful of diseases, is a *cure* for all others, and the unfortunate give credit to so palpable an imposition.

The *dry skin*, as it plainly appears, is nothing more than a defect in the force of the mouths of the arteries, or a resistance and obstruction in the outer skin, called *cuticula*, which is often scaly and scurfy from similar causes\*.

If calcareous particles should pass through the pores, if they be resisted partially or totally, they must in part return into the

\* Eruptions on the skin, of various sorts, may be accounted for on similar principles to the present.

habit and mix with the returning blood in the veins: for whether the absorbing lymphatics or sanguiferous veins carry back these terrene particles, the former to the *thoracic duct*, the latter to the *cava*, still ultimately they must mix with the blood. If there be a greater abundance of these particles than can be circulated in the blood, or external cold prevents their partial evacuation through the pores of the skin, by urine, or from the intestinal surface, then distention of vessels and partial obstruction take place in the vascular or cellular structure of membranes, in the extremities, where the circulation is most languid, the compression of membranes most obvious, and the vessels most minute\*.

From these circumstances, it is concluded, that costiveness and a dry skin, independant of free living and inactivity, are sometimes productive of those particles in the blood, which, when superabundant, accompany a fit of the gout. Many fluids

\* The shoes pressing the soft parts of the foot and toes on the tendons and bones may impede the free circulation of blood in the minutest vessels.

of different composition circulate, some groffer, others in the form of air, or a fine fubtile vapour in the cellulous ftructure of the whole body; oleaginous, ferous, and faline, gelatinous, and earthy, all unite to form a whole. It is rational to fuppofe many changes happen, and many fenfations are produced by the mutations of aërial and other particles of the circulating fluids; though the exact caufes or changes may not always be proved; for many things are beyond demonftration; yet, reafoning by induction often fupplies its defect, and explores new fields in fcience, from what has been already difcovered.

The fit of the gout feems nothing more than a violent effort of the conftitution to evacuate the diftreffing calcareous and gelatinous particles, and the whole art of medicine, in fuch caufes, fhould be fkillfully directed to fecond thefe efforts by *fhortening* the duration of the fit without *repelling* it, and to give *firmnefs* to the conftitution, as occafions may require, in the neceffary expulfion of the enemy.

In the intervals, medicine fhould attempt  
the



the prevention of frequent returns of the fit, by diet, remedies, and judicious management; but in these salutary intentions the art has frequently to contend with inveterate prejudices and impatience; superficial reasoners and obstinate pertinacious vulgar errors; from which causes, perhaps, no disorder incident to the human body is more unskilfully treated, than the gout, though none be more calamitous to the sufferers.

Why the feet and great toes are generally first affected?

Having shewn that the offending particles of matter in the gout are more or less calcareous, united with a superabundance of coagulable lymph, or combining mucus floating in the blood, it shall next be considered, why the feet or great toes, are, in general, primarily affected with those painful symptoms and appearances, that distinguish the gout from all other disorders. In the rheumatism, *muscular parts* alone, between the joints are the seats of the disorder;

der ; in the gout, the *joints* and their surrounding parts are always affected.

The feet are composed externally of the two skins with the *rete mucosum* between them and cellular substance, immediately under which are tendinous expansions, numerous tendons of muscles dedicated to the various motions of the joints of the feet and toes, ligaments which connect the joints, &c. &c.

In the structure of all these parts, and particularly in the nervous and cellulous expansions, are numerous minute blood vessels. The more distant from the heart in the extremities, the minuter the vessels, and weaker the action of arteries, particularly in advanced life, or old age.

In the feet and even hands, the circulation of the blood is more languid than in parts not so remote from the heart or in large arteries. Hence coldness in the hands and feet in winter, or old age, for arterial action preserves heat.

The blood which passes through thousands of these minute vessels is of a serous nature, or its finest particles irrorate or  
transpire

transpire through the cellular texture as light as air ; for the minuter the *vessels* or *cellular structures* are, so much more *subtile* must be *the fluids*, that pass without impediment\*. Almost the whole body is vascular and cellular, the muscular fibres excepted ; and they contain blood vessels in their directions, which is fully demonstrated by minute anatomical injections.— While the blood is in a pure state without a superabundance of gelatinous lymph and calcareous particles, the circulation of all the finer parts of the blood, whether serous or volatile, pass freely through the arteries, capillaries, veins, cells, and external pores.

In such healthful state of the fluids and solids, the gelatinous lymph poured into the minute cells of the *tela cellulosa*, or on large

\* It is easy to conceive that mutations and separations happen to those aerial particles that transude through the minutest cellular structures in a state of disease, and those *changes*, both of condensible and non-condensible, or aerial fluids, may, by *acridity*, *stimulate the nerves*, and *impel the solids to increased action* ; hence partial or universal heat, local inflammation, or fever, and various painful diseases, according as the particles forming fluids may be more or less changed from their original and healthful state.

surfaces, is absorbed by that system of vessels strictly called *absorbing lymphatics*, which are different both from arteries and sanguiferous veins. This is a modern discovery of greater importance when applied to practical medicine, than has been hitherto imagined. When the blood superabounds with gelatinous or coagulable lymph and calcareous particles, probably from the absorbing lymphatics not performing duly their functions, the regular circulation of the blood in the minute system of blood vessels, particularly in the capillary veins and excretory ducts or minute cellular structure, may be impeded\*.

A small distention of these cells probably destroys the absorbing powers of the inhal-

\* I. Because the particles to be circulated have a greater degree of coherence than they naturally should have; or may be larger than the diameters of those very minute vessels and excretory ducts in the skin; or the arterial pores may be closed, and resist the exhaling fluids in their passage.

II. Because the blood or finest fluids brought by the minute arteries into the almost invisible cells of the cellular membranes, will be deposited in the cells, or impeded, in their passage.

ing sanguiferous veins\* and lymphatics; hence an accumulation and superabundance of fluids in the cells, or distensions of minute vessels, and impediments in the circulation.

The heart constantly sends forth blood by means of the arteries to every part of the body; when the arteries totally cease to beat the venal blood first coagulates, and death is the consequence.

But during life, the arteries, which become minuter and minuter as they approach the ends of the toes, receive their blood from the larger arteries, and the minutest arteries pulsate and force by pulsation the blood on to the sanguiferous veins, as, likewise, the perspirable particles through the pores of the skin. The transudation of fluids, so visible on the surfaces of the thoracical or

\* It is doubted by some moderns, whether any other system of vessels absorb besides the lymphatics: if they mean *coagulable lymph* only, it may be answered in the negative: if they mean the finer and more volatile ærial, as well as ferrous saline, particles of blood, it may be in the affirmative; for certainly the very minute sanguiferous veins reject coagulable lymph, but attract and receive the other particles.



abdominal viscera, is performed by the pulsating powers of arteries \*.

Though the veins be impeded, the arteries still pulsate and force on the blood to wherever the impediment may happen to arise.

If these impediments happen in the toes or feet, the pulsating arteries with a quicker and more accelerated force, endeavour to remove the impeded circulation in the part; which if through debility, or any other cause they cannot effect, then the arteries force fluids, where there was already a superabundance: hence local inflammation, pain, and swelling.

Inflammation or heat is nothing more than an increased motion in the arteries with an impeded or tardier circulation of the blood in the veins, and the redness is caused by a deposition of *red particles* of blood in

\* If a fine injection of the arterial system well succeeds, these facts are demonstrable in the *cutis* and villous surface of the intestines, and where the minute arteries are most numerous, as in the apex of the fingers, &c. In the cellular structure that contains the adeps or fat, which, during life, is fluid, the arterial openings are evident in the cells; many preparations of which are seen amongst anatomists.

the cellular structure of the membranes, or other parts, not destined naturally, or in health to receive *red particles*.

From which it plainly appears, that the fit of the gout is nothing more than an inaptitude in the veins or cellular structure to convey back again the fluids abounding with calcareous glutinous matter, forcibly brought to the feet by the arteries. The pores of the skin, which the moderns have fully proved to be the termination of minute arteries, probably, for the purpose of *exhaling noxious or superfluous particles* out of the human body, &c., are commonly obstructed. These particles pass in the form of a *fine vapour or moist air*, in health, continually; but, when impeded by cold external air or other accidental causes, a morbid change of all the fluids of the whole body is immediately produced, as inflammatory or intermittent fevers, pleurisy, &c. fully evince.

In every conflict, from this cause, the parts affected in the gout receive injury, and after repeated fits, some of the cellular structure, of which the whole body is composed,

composed, or capillary veins rupture, and pour forth their contents, and never after recover their original form or tone; the blood being in patients, long afflicted with the gout, of a calcareous nature; chalk stones about the heel, toes, or in different parts of the feet and hands appear.

How the gouty particles affect the nerves?

It will not be difficult to ascertain why the nervous system is so sensibly affected, previous to a fit of the gout; for from the same sources, that produce the fit, arise all those sensations of inappetency, flatulency, eructations, languor, or increased irritability of the mind, flying pains, cold shiverings, flushings, and a variety of unusual feelings; in different parts of the body spasms, apoplexy, palsy, asthma, &c.

Here shall be considered the effects of the gouty particles floating in the blood on the nerves; but in this explanation a minutest investigation may be necessary than this treatise permits\*.

#### I. Ana-

\* Whosoever would wish to be more conversant with the causes of these symptoms, as they appear from anatomical and

I. Anatomy and physiology teach the nerves to be the organs that convey all our sensations to what is called the human mind, and the human mind by means of the brain and nerves can direct all voluntary motions.

II. That if the nervous system, or any part of it suffer distension, or be irritated by any stimulating acrid, ærial, or other fluids, a sensation of pain or uneasiness is felt and conveyed to the mind; which latter seems to suffer more or less distress, according to the force, duration, or acuteness of the uneasy sensation produced.

III. All the nerves are replete with minute blood vessels, a medullary substance, an exceeding fine vascular membrane, through which the vessels pass. Fine anatomical injections, &c., fully demonstrate these facts, some of which may be rationally applied to practical medicine.

and physiological facts, may peruse the Treatise of Female, Nervous, Bilious, Hysterical, and Hypochondriacal Disorders, Madness, Suicide, Convulsions, Lethargy, Apoplexy, Palsy, &c., &c.; a new edition of which will soon appear.

IV. The

iv. The vessels continuing with the nerves, circulate fine particles of blood or fluids.

v. The nerves are found most numerous in parts which have most sensibility.

vi. The vessels are equally numerous in those parts.

vii. If the blood be loaded with irritating particles, the vessels that pass through immediately with the medullary substance of the nerves, more or less, will abound with irritating particles.

viii. The blood in gouty persons is morbid and abounding with irritating particles.

ix. The irritating particles must therefore irritate, in proportion to their *quantity* or *acridity*, the nervous parts of gouty patients.

The stomach, the intestines, the diaphragm, the kidneys, and urinary bladder, the lungs, &c. are all parts liable to be irritated by acrid *stimuli*.—The morbid particles of the blood causing the gout acts as *stimuli*: hence all the uneasy nervous sensations of gouty patients. This morbid distress of the nerves may act



on the moving solids, excite them to more violent action; hence various symptoms and sensations.

*On the general Modes of treating the Gout; with Observations, the Result of long Experience, in various Cases.*

In the *intervals* of the gouty paroxysm, medicine has in different ages, prescribed abundance of remedies and plans of diet, &c.

I. A milk and vegetable diet.

This, in some few instances, when the disorder has been recent, and the viscera sound, has proved a cure, or kept the fits more distant and slighter; in other instances, a dropfy has been the consequence, which has *cured* the gout, but *killed* the patient.

II. Abstinence from wine, venery, and luxurious feeding.

These judiciously applied will prove very beneficial.

III. Various

## III. Various muscular exercises \*.

These are certainly useful, if the patient be able to bear them without injury.

## IV. Change of air.

If, with a proper diet, salutary; it may invigorate the habit so as to sustain the fits with less injury.

## V. Evacuants occasionally, as emetics and purges, &amp;c.

These methods, in general, too rough and injurious.

## VI. Antiphlogistics, as neutral salts, &amp;c.

Few arthritics can bear antiphlogistics on their stomach.

Nitre, &c. except in very inflammatory cases, and strong habits, are dubitable or dangerous remedies.

## VII. Tonics, as bark, chalybeates, &amp;c.

These are extremely useful to the debilitated in strengthening the system.

## VIII. Stimulants, as mustard, aromatics, &amp;c.

In many cases heating; but in cold, phlegmatic habits, useful.

\* Lately by *Buzaglo*.

## IX. Mercurials, and even salivation.

Mercurials as alterants, useful, joined with antimony; salivation in general injurious.

## X. Antimonials.

Preparations of antimony are often of great utility, if they do not irritate; but in very delicate habits not to be prescribed.

## XI. Sulphurous preparations

Have prevented both gout and rheumatism from returning so often as usual, nay, for many years.

## XII. Bitter infusions, powders, decoctions.

Bitters useful joined with steel in some cases; in others injurious.

## XIII. Lime water.

An excellent absorber of acidity, and very useful to gouty and nervous patients abounding with wind and acidities in the stomach; particularly if it be joined with bitters and aromatics, or carminatives.

## XIV. Mineral waters.

Tunbridge and Bath waters, by invigorating

rating the habit, have fixed the gout in the feet, and have been proper remedies in debilitated constitutions.

#### xv. Warm bathing

Should be cautiously used in cold weather but sometimes very efficacious, especially the baths introduced in this treatise.

xvi. Solution of *gum guiacum* in rum joined with nitre. This came from the Governor of Martinique as a wonderful specific. It has not cured one person, as might have been foreseen by experienced physicians. The *guiaicum* is very heating in many habits, particularly in the nervous and irritable, therefore this remedy is mostly adapted to the cold and phlegmatic; though, in some measure, corrected by the *nitre*, which last salt few gouty stomachs can bear.

xvii. Numerous empirical projects, as *Le Fevre's* powder, &c. &c.; the introduction and applause of which, *pro tempore*, while the *mania* lasted, have chiefly depended on the artifice of the projecting and daring adventurers, and the easy credulity of the unfortunate sufferers, who,

G 2

though

though very sensible in other respects, have been often imposed on by bold, artful adventurers.

It would be losing time to little purpose to minutely examine all these proposed and contradictory remedies for the gout; it is sufficient to observe, that few, very few, gouty patients have experienced much relief, and as to a *radical cure*, I have seldom seen such an happy event, after above thirty years full observation and extensive practice in the art of medicine.

It may be affirmed, in general, that the disorder is *often incurable*, the reason of which shall be more satisfactorily explained in a future part of this treatise.

In the gouty paroxysm or fit, various are the modes or rather caprices of treatment, as :

I. The free use of strong wines, cordials, and spirits, under the specious pretext of keeping the gout out of the stomach; this, though applicable to some, very injurious to others.



II. External applications to the parts affected, as burning with *moxa*, &c.

These are out of repute.

Fomentations

Relax ; but in some cases useful, in others hazardous.

Poultices of strong beer grounds and oatmeal, are in disuse, as likewise many others ; for they lay too heavy on parts inflamed, if there were no other objection.

Leeches,

Are seldom applied, and have not proved efficacious.

Blisters,

Their repetition and ill success have settled their reputation, though this application was the *mania* for a time.

Stinging with nettles,

Aburd ; because there is not sufficient inflammation in the disorder, it must be augmented.

Ointments and liniments,

Injurious, and liable to *repel* the gouty flux.

Oils,

Oils, &c., &c., besides an innumerable farrago of superstitious and contradictory applications, some heating, some cooling, and some of a middle nature, neither stimulating nor cooling.

III. The opinions of physicians are various ; for some advise

An antiplogistic regimen,

Only applicable to the very robust.

Abstinence,

Of use to great feeders.

Bleeding,

Rarely necessary, and frequently injurious, except in *dyspnœa* and particular dangerous cases.

Saline cooling remedies,

The gouty stomach will seldom bear.

Vomits and purges,

Too violent, except in particular cases.

Others praise the utility of

Cordials.

To those who have lived very free,  
useful;

useful; to others, unless diluted, too heating, except when the stomach be attacked.

Stimulants and tonics,

Frequently useful out of the fit,

Others recommend nothing but *patience* and *warm flannel*, and insinuate that *Nature* is the best doctor for the gout.

This is the surest method for prolonging the fit, confirming the disease, and producing more frequent fits hereafter.

Meat, half dressed, small beer, and a cheerful intoxicating glass once a month, have been recommended.

Changing from free diet and wines to small beer has produced dropsy or debility, and terminated fatally; therefore applicable to few gouty subjects.

On the whole of which it may be observed, that every plan of treatment hitherto suggested has failed, and must be irrational, if universally applied. Every *individual* almost requires a *particular treatment*: it is the province of physic to discover the peculiarities of each — the constitution,

stitution, nature of the fit, and a variety of other circumstances, which rational medicine can alone comprehend, joined by long experience and unprejudiced observations; for although no *radical cure* may be effected in the generality of instances, yet patients may be rendered *safer* and more comfortable than if the disorder be left to what is called Nature, or treated without discrimination.

*On the Treatment of the Gout during the Fit,  
by the new-invented Gout Baths.*

A discovery was made about ten or eleven years ago, that the remedy which was used with such extraordinary success at Paris in the fit of the gout, was the *muriatic acid* diluted with warm water \*.

The principal arguments in favour of this excellent remedy, are :

\* This preparation had been used above twenty years before, and approved of by several regular physicians; at Paris the original inventor kept it a secret. I sent for some through the praises it received from a gentleman of rank in London, whose veracity could be depended on, and who had been successfully treated at Paris.

1. That

I. That the fit of the gout is much shortened.

II. That the patients have less pain than when otherwise treated.

III. That they recover the use of their limbs much sooner after the fit, except in old and inveterate cases.

IV. If credit may be given to the inventor, by using the baths spring and autumn, the gout may be long prevented, and in consequence the fits rendered more distant.

V. That, while the fit of the gout be present, when treated in this new manner, the patient is generally more chearful, and has often better nights, than is otherwise observed.

VI. That the *crisis* of the gout sooner happens, and the calcareous or earthy particles, that probably occasion the fit, are, after a few bathings, evidently discharged; through the pores of the skin, or by the urine, if not in all, yet in many instances.

VII. Or if the causes of the fit be not removed by perspiration, the earthy irritating particles by means of the acid are attracted to the legs and feet, and in many instances,



the calcareous particles and gluten may be observed on the legs and feet, after each bathing.

VIII. If the *head, stomach, lungs, pleura,* or any internal part be affected, the bath is a prompt remedy to attract the gout to the feet, and thus the internal parts are liberated from imminent danger.

These were the general doctrines promulgated by the original inventor, and experience proves, in general, they are well worthy of attention.

### *Of the Composition of the Gout Baths.*

The component parts of the baths are, the *muriatic acid*, and warm water, in certain proportions according to circumstances.

That the liquid, which is called *elixir* by the inventor, and sold at a guinea, or a *Louis d'or*, a small bottle, is nothing else than the *muriatic acid*, the following experiments fully prove \* :

It

#### \* EXPERIMENT THE FIRST.

Some silver being dissolved in the *acidum nitrosum aquâ dilutum*,

It was some time after, I had tried the original *elixir*, as the author calls it, on various patients, that the analysis was made; the price of the baths being too exorbitant for any except the wealthy.

It was observed, by repeated trials, that the French baths were too strong, as they occasioned small vesications about

*dilatatum*, some of the *elixir*, as it was called, was added, and the silver precipitated.

#### EXPERIMENT THE SECOND.

Pouring three parts of *oleum tartari per deliquum* on one of the *elixir*, a brisk effervescence ensued, and, on evaporating the liquid, the remaining mass was discovered to be composed of much sea salt.

#### EXPERIMENT THE THIRD.

In order to discover whether any nitrous acid was combined with the preparation, a piece of paper was imbibed thoroughly with the liquid, and dried; but, on being burnt, none of those sparkles, which appear from nitre, were perceived. This evidently proves the absence of nitrous particles.

#### EXPERIMENT THE FOURTH.

Some *hydrargyrus purificatus* was dissolved in *spiritus nitri acidus*, diluted; some of the *elixir* was added, and the *hydrargyrus purificatus* immediately precipitated.

Many other experiments, too tedious to insert, as well as the smell of the liquid, all conspired to prove it to be the *fuming muriatic acid of Glauber*.

the feet, which, however, proved of no ill consequence. The original bottle contained about five ounces of the *mu-riatic acid*, this was mixed with five, six, or eight quarts of warm water, and the patients feet were bathed, for an hour or an hour and half previous to laying down in bed: the feet are to be kept warm, and one hour after, the bathing is to be repeated for two hours, if possible; the same operation, according to the author's advice, is to be renewed.

*Conjectures on the Manner of the Operation of the Muriatic Acid Baths in Fits of the Gout.*

It has been already remarked, that the causes of the gout are a superabundance of calcareous particles and gelatinous lymph, or gluten, circulating in the blood\*.

To

\* It is remarked in the Treatise on Female, Nervous Diseases, &c., if the blood be in a *buffy state*, it is not easily changed.

To investigate the action of the muriatic acid on the calcareous particles of the human body, recourse may be had to facts, which are well known to all practical anatomists.

I. Calcareous particles, even of bones, are attracted by the muriatic acid, diluted with water in a strength similar to the baths.

changed either by repeated bleedings, abstinence, saline remedies, &c. ; for bleeding after bleeding still shews the coriaceous crust, not always a sign of true inflammation. What is the cause ?

I. The nutritious particles composed of earth, gluten, &c., which should restore the body, are impeded in their passage to the cellular structures they were originally intended for, and to the places they are conveyed by the arteries in sound health.

II. From this cause many particles of earth, gluten, &c., are retained in the blood of both arteries and veins : serum and saline particles only proceed to the minute cellular system ; hence acidity and irritation.

III. By every day's nutrition until the causes of impediment be removed, which are sometimes very tedious, as in the chronic rheumatism, &c., fresh particles are attracted by those already circulating with the blood ; earthy particles attract earthy, gluten glutinous ; hence those accumulations of calcareous and gelatinous particles in the blood so obvious in gout, rheumatism, &c. The difficulty of their removal will not be difficult to discover from a true comprehension of these causes.

II. Such

II. Such a weak diluted liquor will have no effect on the softer parts, vessels, or viscera; for these require *two thirds* muriatic acid, and *one third* water, to remove the vessels, &c., in anatomical preparations, injected with coloured wax, &c.

The conclusions are evident. Calcareous particles, such as cause the fit of the gout, are attracted by as weak a liquid as composes the *gout baths*, or nearly so, without injury to the skin or soft parts.

It has been asserted, that an earthy white powder is sometimes perspired through the pores of the skin of gouty persons, so as even to mark a table white, as though chalked. The same, likewise, may be seen by means of a microscope. — The particles are similar to the osseous or calcareous hard parts of bones, and are attracted, or changed by similar *menstruums*.

The impediments in perspiration are the frequent causes of fits of the gout: the pores of the skin seem clogged up by calcareous or glutinous particles; or they pass through the pores with difficulty, or accumulate



accumulate on the surface under the outer skin.

Whether the acid of the gout bath, during bathing, attracts the gouty matter, and draws it through the arterial pores, or whether by the mere operation of opening the pores of the skin the gouty cause, which obstructed those pores, be liberated and evacuated, I cannot at present positively determine; but an opinion shall be delivered: perhaps future experiments and reasonings may more satisfactorily elucidate this subject, and shew that *the nitrous acid diluted is superior to the muriatic* \*.

The

\* To draw inferences from some observations and facts, it may be supposed that the acid of the bath attracts, in a certain degree, or dissolves the earthy particles in the feet; so that they pass through the pores, and thus liberates the constitution from the cause of the morbid local distress.

*First*, Because the patient soon seems unloaded of the pressing causes of the gouty fit, and because the same strength of acid attracts calcareous particles, without in the least injuring or affecting the softer parts.

*Secondly*, Because, on examining the limbs of persons much afflicted with the gout, immediately after bathing, a matter often may be scraped off, which appears like earthy particles attracted, and in some measure changed, by the acid; and those who are most afflicted with the gout, and

are

The gouty baths probably, then operate by

I. Opening the pores of the skin, and by attracting the gouty particles from the arterial openings through the skin.

II. By invigorating the circulation of the blood in the extremities, particularly in the returning veins, after the minute arterial system of external openings are unloaded, and obstructed perspiration is removed.

III. By attracting and drawing down an abundance of gouty earthy particles to the feet, where they should be naturally deposited in regular gouty fits.

are subject to a dry skin, have this attraction of gouty matter through the pores in the greatest quantity.

These particles coming through the pores, if dried, have the appearance of calcareous matter united with gluten, and adhere together. In some instances a great quantity of this matter may be scraped off, by means of a wooden spatula, from the skin. It, therefore, appears that the acid liquor dissolves or attracts the gouty matter, without injuring the skin or softer parts of the body.

In other instances a less quantity of gouty matter seems attracted or changed; the calcareous particles of some may be dissolved in the liquor, perhaps in others not.

iv. By increasing insensible perspiration, and removing the causes of viscid blood, mentioned in page 53, without relaxation; for the *muriatic acid* is known, internally taken, to be an excellent antiseptic, or resistor of putridity\*.

There is a considerable difference between baths of merely warm water, or sweating the feet by bootikens, &c., and baths composed of the *muriatic acid*, &c.

The former modes often create great debility and lameness in the feet, for a long time after the gouty fit: whereas the latter seldom leave any such relaxation; unless in those, who were old and extremely weak before, and who had suffered the gout many years with frequent returns of

\* I have read in some chymical author, I think it was in *Collectanea Leydeniana*, that the muriatic acid was given internally in a decoction of some bitter infusion, properly diluted, as an excellent remedy for the gout. It has been used near two centuries, diluted with water, as a cooling acid drink in fevers. If any remedy could be invented to prevent the mentioned causes of the gout, the cure would be complete, if timely applied.

violent paroxysms, and who experience the same, whether they bathe or not †.

When the gout is left to make its baneful ravages under patience and warm flannel, with the addition of cordials and strong wines, or by whatever mode the gout may be treated ; great debility is frequently the consequence ; but in the management by the baths, the pain is less, the crisis of the gout is hastened, and often in a week or two is performed, what is not procurable, otherwise, in a much longer time, and less weakness and lameness succeed to the fit.

† In such, nothing less than a regeneration of the injured or destroyed parts, and the return of the pristine vigour of the body, which is more to be wished than rationally expected, can restore the patient. It is not easy to determine what relieves such persons during the paroxysm : sometimes no remedies seem to avail even in alleviating the painful disorder ; at other times they imagine benefit has been obtained by some trifling inefficacious remedy or application ; and whatever was administered at the time ease was procured, that is praised, and supposed to have given the relief, when perhaps the fit was naturally terminating. Such conclusions, however, have, at times, introduced many absurd remedies for the gout, such as charms, amulets, rolled brimstone put in the bed, &c. &c.

*On the Times of using the acid Gout Baths,  
and Method of preparing them.*

The times for using the gout baths are daily, during the fits, for about eight or ten days, more or less, as circumstances, constitutions, and cases require.

I. In those patients, who had but few and slight attacks, the pain and misery, as likewise the paroxysm, are soon removed by the baths.

II. Those, who are aged, who have laboured under the gout many years, have lived free, and have had a great number of fits, should bathe longer than the former. It cannot be expected, that an inveterate gout will so soon yield to any treatment as the recent.

III. Those, who have chalk stones, whose bodies are emaciated, or greatly debilitated by painful watchings, loss of appetite, indigestions, and who labour under a general *tonia* of the body, should not use the baths; not because the bath would injure such persons, but the expected relief is not procurable



curable either by this, or any means. If such patients do not obtain benefit, which is often unreasonable to expect, the last remedy used, is often accused of injuring them, especially if it be a new application or medicine\*.

iv. If the gout attack the head, causing great pain or delirium, lethargy or the apprehension of apoplexy; or if the stomach, or any part of the chest be attacked, causing pungent pain, laborious or difficult breathing; the baths, if timely and judiciously applied, will often be useful. In these desperate cases, death, sometimes suddenly, and at other times more slowly, is the consequence. In such dreadful instances, therefore, it is humane to attempt relief even from a doubtful remedy; for what is not doubtful under such dangerous circumstances, than to suffer the patients to die without any attempt to remove the causes †?

The

\* It shall be considered how such afflicted patients should be judiciously treated in the latter part of this performance.

† The improved manner of preparing the baths is the following:—A glazed upright pan must be procured, of the  
brown

The bathing is to be continued longer or shorter, according to the following circumstances :

I. If the pulse become quicker, which may be easily ascertained by a seconds watch, an universal or partial perspiration may be expected, and while this be moderate, it should be encouraged, during the whole time of bathing.

II. If the insensible perspiration should be augmented, and, if what be called *su-*

brown earthen ware made at Chelsea, the same that crucibles are composed of; the circumference should not be much larger than to contain the feet and legs; the form should be an oval. Three or four gallons of warm water should be put into this pan, and an earthen pipkin, of the brown stone ware, should be ready to add fresh warmed liquor as that in the pan becomes cool. Metallic vessels are improper.

To every gallon of warm water may be added six drachms or an ounce of the muriatic acid.

The water and the spirit should be well united by stirring the composition with a stick.

The feet and legs are then to be placed in the bath, in such a comfortable warmth that the patient can easily bear the heat, from 90 to 96 degrees, according to constitutions.

The thighs and top of the pan are then to be covered with a large piece of double flannel, to keep the parts warm, as well as to preserve the heat of the foot bath.

*dor,*

*dor*, or sweat, should issue in larger or smaller drops on the surface of the skin, particularly on the face, then the feet are to be taken out; for though a gentle perspiration will be certainly beneficial, yet profuse sweat will leave the patient more relaxed than would be prudent by this, or any other treatment.

It is most rational to proceed according to circumstances, and to permit patients to bathe a shorter or longer time in proportion as the disorder be very inflammatory, or slightly so, and as the body may be vigorous, or delicate, nervous, irritable, or greatly debilitated.

The time and repetition of bathing, likewise, should be different in different cases and constitutions; the original inventor recommends bathing morning and evening, repeatedly, and in some instances, this method may be very efficacious, but in others not. In the true inflammatory gout of robust constitutions, the bathing should be repeated twice in the day, by which the fit will sooner terminate; but in the atonic gout of debilitated habits, bathing, if permitted,

mitted, should be repeated once a day, and that in the evening.

In the former, the fits are more regular than in the latter, and terminate sooner; for when the body has been long afflicted with the gout, an universal *atonia* or debility is generally the consequence, and the fits are more uncertain, vague, tedious and distressing; under which circumstances, it often happens, that no remedies give relief.

After bathing, the legs and feet should be gently scraped, if sufferable, with a blunt wooden spatula\*, by which means, if any of the calcareous particles should have been attracted through the pores, or should lie on the skin, they may be removed.

If these particles, or scrapings be put on paper, and left in the air to dry, they adhere together†.

If these particles should not transude, nor be dissolved or attracted in the bath; yet the legs and feet should be thoroughly

\* Shaped like the ivory folding stick that stationers use.

† They seem composed of calcareous particles and animal-mucus, in different proportions.

wiped with a cloth and gently rubbed, that the pores may be as much liberated from obstruction as possible. Warm stockings of the *fleecy hosiery* should be then put on, and the patient should be conveyed to a warm bed; by which means a mitigation of pain, rest, and insensible perspiration are often procured. If these happy effects should not happen in the first few bathings; yet by a repetition, they frequently are obtained.

If the bathing should be repeated in the morning, the patient should be put to bed for an hour or two, and after that, if disposed to arise and sit up, he should suffer the perspiration to subside, and the warmth to gradually cool: but all these circumstances should, in some measure, depend on the individual constitution of the patient, the nature of the gouty fit, the temperature of the air, the seasons of the year, &c. &c., all which may be considered by the medical practitioner, or determined by the good sense and experience of the afflicted patient.

During



During bathing, patients may use those drinks, that their stomachs have been most accustomed to; but moderation is recommended in all cases.

In some instances of bathing, the baths, in a few days, have produced a favourable crisis; copious discharges of earthy particles have been deposited in the urine, the fit has soon terminated, and this mostly in inflammatory cases and robust constitutions. In the flying and *atonic* gout, ease has been procured immediately, in some patients, in others not; but, in general, the fits have been greatly abridged; by which the digestive and other powers necessary to life have not received such severe shocks, as when the disorder has been left to nature, or treated by any other method; the mind has been more tranquil, and the strength of patients has been restored sooner than otherwise is generally experienced\*.

\* These facts can only be ascertained by comparing the present fit with the true history of those formerly suffered under different treatment; but it may be observed, that while we suffer a present pain we are apt to think that the worst, forgetting what was past.

The *number* of times the bath should be repeated depends on circumstances; the sooner the fit terminates, the sooner the baths may be omitted; but after the pains of the fit have ceased, the baths should be repeated three or four times.

In the intervals of fits, the baths may be used once or twice in a month; they will contribute to soften and remove callous substances about the feet; open the pores without relaxing, and render the extremities less liable to attacks.

During the fits of the gout, when the parts have been bathed in the intervals, the skin will make less resistance to the inflammation, the swellings of the feet will be attended with less pain; there will be a greater certainty of the gout forming in the extremities, and less probability of its attacking the head, chest, stomach, or other important internal parts, that commonly endanger the patient's life.

*On the medical Treatment of the Gout during the Fit.*

The principal intentions of medicine, during the paroxysms of the gout, are :

1. To prevent the head, lungs, stomach, diaphragm, or other internal parts from becoming the seat of the disease.

If the head be attacked, and not promptly relieved, apoplexy, lethargy, palsy, or death have suddenly been the consequence.

If the lungs, or diaphragm, sudden difficulty of breathing, from obstructed circulation in the venal system of the lungs ; if in the heart, intermittent pulse, or spasms, syncope, or faintings, death.

Though in such serious attacks, all medicine, however skilfully applied, may *fail*; yet it is the duty of the art to divert, if possible, the gouty particles from those vital parts ; or if *there*, to attract them to the extremities.

In all instances, where such attacks may be *apprehended*, the patient ought to bathe not in warm water only, which is a common practice, but the feet and legs should be retained a considerable time, if practicable, in the muriatic bath; after which, being placed in a warm bed, a gentle perspiration should be promoted by antimonials in very small doses, joined with cordials, volatiles, powdered snake root, or Minderarius's spirit, camphorated solution\*, tincture of snake root, guaiacum, or any other stomachic and nervine diaphoretic, consulting always the patient's peculiar habit, present strength, &c., what has formerly agreed or disagreed. The antimonials will accord best with the robust, least with the delicate, irritable, and debilitated. The stomach should be attended to, and bitter stomachics prescribed, or carmi-

\* The solution of camphor I recommend in my *Treatise on Nervous Diseases*, composed of camphor dissolved in spirits of wine, mucilage of gum arabic, and water, is preferable to camphorated julep, because the dose of camphor can not only be ascertained, but the volatile particles do not fly off by being mixed with warm water, &c.

natives, wine, spirits, and water, &c., according to circumstances\*.

If the head, chest, or stomach should be attacked, the use of feet baths will be highly advisable; as they are likely to attract the gouty particles, promote a warmer and freer circulation in the legs, feet, or hands.

In attacks of the natural, animal, or vital functions, if violent, the extremities, generally, become chilly or cold, the blood itself is there first impeded, and afterwards coagulates. Venal and cellular obstructions or coagulations of the blood, are the causes of that coldness of the feet and legs, which generally preface death. It must, therefore, appear extremely rational, that the reanimation of the sinking nervous system, and promotion of a freer circulation of the blood in the feet, are the only probable

\* Whoever would wish to know more on the treatment of *valetudinarians*, nervous, irritable, and bilious patients, &c., may consult the Treatise on those subjects, where all nervous sensations and symptoms are traced up to their sources, and methods of treatment amply delivered, with numerous prescriptions.



means of preserving the patient's life, in such dangerous situations.

The intestines, during the fit of the gout, should be kept gently open, flatulency or wind prevented generating by *calcinèd*, or common *magnesia*, with or without *lac sulphuris* in chamomile tea, peppermint water, or bitter infusion to the more vigorous; but to the nervous and debilitated, powdered rhubarb, ginger, and calcined magnesia, or soap or aloetics and rhubarb, or any light aloetic, to which the patient has been accustomed, joined with the gum pill, may be useful.

*Volatile alkali and bitters*, with cordials, correct fixed air, or neutralize it in the stomach, and thus remove flatulency. In other respects, symptoms as they arise, ought to have their causes investigated, by the rules of art, and removed or palliated. The fever that attends gout should be treated differently; the robust and florid will, sometimes, bear bleeding\*, laxa-

\* Bleeding should be used cautiously, and never ordered in the *atonic* gout, with great debility. *Sydenham* observes, that bleeding never answered any curative intention in the gout, except in very particular instances.

tives of infusion, and tincture of senna, joined with soluble tartar: to others of a more delicate constitution, bitter aloetic laxatives joined with James's powder in very small doses. Minderarius's spirit and camphor with tincture of snake root are efficacious in some cases; whilst antimonials, in small doses given at distances, are better in others; in all arthritics, the *regular, irregular, atonic, or flying gout*, and their variety, ought to be always considered, and prudently managed without *violent doses* of remedies. The gout may be gently *led*, but not *driven* out of the habit. In cold weather and winter, gouty persons should keep much in bed during the paroxysm, in summer not;—numbers have lost their lives through inattention to those circumstances, by receiving sudden cold.

It is denied, that any treatment can be judicious unless applicable to the particular individual, times and seasons of the year, nature of the fits, &c.; for what may be excellent to one person, may prove hurtful to another. It may be useful, therefore,

to

to deliver some hints concerning individual constitutions, arising from long observation and practical experience ; for though it may be very difficult to select a proper arrangement for all habits and circumstances, yet an imperfect attempt may be, in some degree, useful, particularly to the inexperienced.

### *The Corpulent.*

Corpulent persons afflicted with the gout, if of a florid complexion and short necked, are subject, in the latter part of life, to apoplectic fits, lethargy, difficulty of breathing. These should be bled, or cupped occasionally, have a seton in the neck, be treated cautiously by evacuants, and should observe a *very dry* and rather abstemious diet, in order to keep the vessels from repletion or fulness. *Corpulent persons* of a *pallid* complexion, are subject to dropsies, asthma, difficulty of breathing, water in the chest or pericardium, sinkings and lowness. These patients have a superabundance of serum, and are destitute of red particles in the blood ; serum is to be evacuated

occasionally by rhubarb, ginger, and large doses of cremor tartar, or with cremor tartar, and jalap, if admissibile, or aloetics. If there be no cough, chalybeates and tonics are always proper.

If an asthmatic cough should attend, the steel is contra-indicated, and squills, ammoniacum, sagapenum, &c., are proper; as a tonic, if admissibile, Hoffman's anodyne liquor, and such preparations, may be prescribed.

*Those of a slender and lean Habit of Body.*

These are to be considered in two points of view, independant of the mind being more or less irritable. The florid and slender should be treated by mild antiphlogistics and gentle laxatives of rhubarb and *tartarum solubile*, or with *diuretic salt* and bitters, if their stomach will bear such practice; but the pallid require warm stimulating cordials and tonics; soap and rhubarb or aloetics are in these the most proper laxatives, &c., if they have not the piles.

*Mental Considerations.*

The mental sensations from the calmest state to the greatest degree of sensibility or irritability should be considered; the *placid* require volatiles, stimulants, and tonics; and the *irritable* nervine sedative remedies, that allay irritation, such are camphor, valerian, the fetid gums, gum pill, &c.—*Opium* should be given very cautiously, lest it produce delirium or costiveness, and lock up what should be evacuated.

*The Robust.*

These require occasionally powerful evacuants, a moderate diet, and as much exercise as they can bear, when the fit be not present.

*The Debilitated.*

These require stomachic laxatives occasionally, and tonics of bark, steel and vitriolic preparations with bitters, &c.



*Recent Gout.*

When the gout first appears, in some constitutions it may, I believe, be cured by strict regimen and by taking *lac sulphuris* and *calcined magnesia* daily ; but no expectation of cure, by these remedies, need be formed ; for in all my experience, I scarce ever could prevail with any gouty patient to live a sufficient length of time by rules, or pursue any plan, however judicious, so as to give a reasonable expectation of curing the tormenting disorder : but what I have seen done by diet and medicines makes me conclude the disorder may be rendered milder.

*Old and inveterate Gout.*

The cure is generally *impossible*. The only thing which medicine ought to attempt, is to keep the fits distant by invigorating the habit without heating it, and by preventing the gout, during the fits, from attacking the vital and animal functions.

In the former part, it is asserted, that

reasons should be given why the gout after repeated fits is generally incurable \* ?

As

\* I. In the first gouty fits the soft membranous parts are all in a state of violent distention ; some of the cells of the cellular structure are often ruptured, as likewise many minute vessels. The *tela cellulosa* is proved to demonstration to form all the parts of the body, muscular fibres excepted. In the divisions and interstices of muscular fibres the cellular structure is obvious all through the minutest parts, abounding with vessels, &c.

II. In every succeeding fit the same violence produces the same effects, and every time fresh ruptures or destruction of parts ensue.

III. The vessels and cells, thus ruptured, become generally, if not always, obliterated ; the diseased parts become harder, resist the gouty inflammation more obstinately, and occasion succeeding fits, if the body be strong, to be more and more violent, painful, and tedious.

IV. In proportion to the great number of succeeding fits, their violence and continuance, frequency, or distance, so must proportionably a greater number of cells of the *tela cellulosa* or vessels become one confused mass, and quite different to their original structure.

When calcareous matter bursts from the vessels or cells, and is deposited in the toes or feet, all the spaces it occupies, forming what are called chalk stones, are parts detached from their original adhesions, whether membranes or cutis, &c. When the swelling breaks, or is opened, the white matter issues, evidently of calcareous particles and coagulable lymph, in different proportions ; then an ulcer follows, which is generally very obstinate in cure, according as the original rupture of cells or vessels were deep or more superficial.

As no method as yet has been discovered to prevent fits of the gout after the disorder has been long in the constitution, as the ravages that disorder commonly makes in particular cannot be obviated, as the affected parts can never be restored to their original structure and functions, and as after each fit there is commonly left sufficient seeds or particles in the blood for the reproduction of the disorder by accumulation, the reasons why the gout is *incurable* when  
*inveterate,*

ficial. The diseased parts afterwards are liable to fresh extravasations of similar matter from future fits. All these facts my own experience, as well as the observations of others, fully confirm.

This repeated destruction of parts by reiterated inflammation and resistance of parts, before already diseased, renders the softer membranous substances harder than they were naturally before the fit of the gout.

v. These reiterated fits, by rendering the membranous parts less flexible, cause all that stiffness which is experienced about the joints of gouty persons, especially those who have had the disorder many years.

vi. The parts, therefore, thus destroyed, or vessels thus obliterated, cannot be restored, but retain the ravages of the disease with a partial vascular system, merely sufficient to circulate a proper quantity of fluids to preserve the life or warmth of membranous parts thus affected.

vii. There-

*inveterate*, must appear obvious to every reflecting physician \*.

*The Gout without Chalk Stones.*

The gouty paroxysm may be treated safely and advantageously by the gout acid baths, &c.

VII. Therefore, as these effects of repeated fits of the gout can never be either prevented when the disorder has been inveterate, nor the diseased parts restored to their pristine vigour, without the creation of new cells, new vessels, new nerves, and the original flexibility of the parts so diseased, which is impossible by human art, it follows, no *radical cure* can ever be obtained, but every fresh fit must produce fresh mischief, and the greater number, much more remote must be any probability of cure.

Add to all these reasons, *unsound viscera*, the *perversion* of the *secretions* and *excretions*, the want of *due digestion*, *chylification*, *sanguification*, and the universal debility of the nervous and moving powers; all which, collectively considered, will explain the causes why the gout is incurable, especially if inveterate and in advanced life.

\* The effects of the gout, which have been delivered, are not visionary nor hypothetical, but practical, and demonstrable by dissections, which I have repeatedly made.

*The Gout with Chalk Stones attended with  
great Debility.*

In such cases I have seldom recommended the baths, and therefore cannot speak with certainty of their success, but am inclined to think them, or any thing else, except palliation by mild remedies, of little utility, when the body be much debilitated and the patient greatly advanced in life.

*The Fits that are very inflammatory and  
short*

Are to be treated generally by a light antiphlogistic plan, by volatile saline draughts or James's powder, or any similar antimonial, diaphoretics, the bath, &c.

*The Gout less painful, vague, flying from Part  
to Part and long continuing.*

This species of gout is called by some atonic and misplaced, and is, in general,  
arising



arising from debility in the moving powers, or a want of due energy in the circulation. The morbid matter circulates from one part to another, seemingly from the communication of the cellular structure of the *tela cellulosa*, and fixes often on the weakest.

If it fix on the coats of the stomach, it sometimes produces inflammation, violent pain, nausea, sickness, vomitings, tremors, and spasms on the diaphragm; hence hiccoughings, difficulty of breathing, faintings, &c. In the membranes of the brain, pain, distention of vessels, apoplexy, lethargy, and palsy.

In all such symptoms the disorder, if possible, should be attracted to the feet, by means of the acid baths; which should in such desperate cases be often repeated and continued as long as bearable.

Internally stomachics, cardiacs, bitters, stimulants, and diaphoretics of snake root, musk, castor, camphor, &c., are proper \*. The bowels should be kept lax.

\* For the means of removing the nausea and vomiting, and other affections of the head and stomach, &c., the book on Nervous Diseases may be consulted.

*The Gout accompanied with Gravel or Stone.*

In such cases, soap and rhubarb with the Chio turpentine in the form of pills and oleaginous mixtures united with the fixed alkali, to which may be added the oleum juniperi, are most proper, and sometimes the universal warm bath; which may be composed of the muriatic acid and tepid water in more diluted proportions. I have known the baths useful in gravelly complaints, &c.

*The Gout attended with bilious Complaints.*

There are two opposite species of bilious complaints; the one from a redundancy of bile irregularly coming to the duodenum, in which case bilious vomitings and purging; the other from obstruction either in the liver itself, or in the bile ducts, by which either a proper quantity of bile is not secreted, or conveyed to the first intestine or duodenum.

In the first the bile should seldom be brought upwards by vomits, as is too common

a practice, unless it be impossible to unload the stomach of the bile by any other means. The bile should be conveyed downwards by infusions of senna, cremor tartar and rhubarb, or by some slight aloetic given in small, but repeated, doses, until the bile be thoroughly removed from the stomach and intestines. Then bitters and slight tonics may be necessary to strengthen the stomach and allay its irritation; but astringents are generally improper, as likewise opiates, for they tend to lock up the offending matter.

In the second instance, when the bile be either not secreted in sufficient quantity in the liver, or if it be impeded in its passage through the ducts, occasioning *whitish*, dry and clay coloured *excrements*; the obstruction should be attempted to be removed by detergent laxatives of soap, aloes, &c. rhubarb joined with small doses of *sal sodæ*.

A quarter of a grain of calomel joined with three or four grains of any aloetic pill, is an excellent remedy not only to remove costiveness but gradually the obstruction. Such a pill may be taken every night; and before dinner and supper the bitter infusion

and

and tincture with half a dram or two scruples of the sal diureticus made into a draught. These are successful remedies in such cases when long continued.

Rhubarb and tartarum solubile in simple peppermint water have their advantages in the more robust and inflammatory habits.

*The Gout in the early Time of Life,*

May probably be cured, if the patient would conform to a strict regimen, and has *sound viscera*; but experience proves that *few, very few*, gouty patients will change, what are considered the comforts of life, for the greatest certainty of cure. One very great cause of the gout, in an early period of life, is, that injudicious practice of giving children, or youth, whilst growing, wine, and such like improper liquors, entailing on them much future misery.

*The Gout in the latter Part of Life*

Is always incurable for the reasons already delivered; palliating the symptoms, and invigorating the habit is all that medicine can rationally expect.

*The Gout when the Fits are distant.*

In the intervals the constitution should be attended to, and the body invigorated; the baths may be used once or twice a month. There can be no objection to distant fits provided the nervous system be not depressed with those miserable sensations of low spiritedness, which some gouty patients, possessed of great nervous sensibility, experience.

If nervous attacks be frequent or constant, they may be treated in the manner I have recommended in the treatise on those complaints.

*When*



*When the Fit be frequent.*

The fits of the gout are frequent in those who have long had the disorder, and whose bodies are feeble, or it happens to those who are very free livers and great wine drinkers. A *batch of claret* will, in some arthritics, at any time, produce a fit of the gout.

In such, greater moderation should be recommended, and their constitutions should be invigorated, if they permit medical assistance, during the intervals, by tonics of bark, steel, &c., according to the peculiar habits of the patients.

*The Gout complicated with Dropsy.*

From projects of low diet, chiefly vegetable, small beer, water, milk, and such like irrational practices, when applied to persons in years who have generally lived freely, has the gout been converted into the dropsy: from bleeding piles or other hæmorrhages, the same has happened. In  
such

such cases the patients should be supported by tonics, as bark and the vitriolic acid, if the stomach will bear it, vitriolic æther or steel and bitters, if there be no contra-indication to their use, as difficulty of breathing, cough, &c.

The fits of the gout, under these circumstances, are weaker, remain longer and often shift from place to place, and may be generally treated as the atonic; but if the vital parts become affected, death frequently is the consequence; for water is often found in the chest or pericardium, on inspecting the cadaver.

*On the Gout accompanied with Asthma.*

In this case there is danger, at times, particularly in winter and in gouty fits, of suffocation, unless the lungs can be liberated. In some cases bleeding or cupping may be useful; but these must be prescribed cautiously, and only on urgent occasions, and never in the nervous asthma: but blistering on the *scrobiculus cordis* is generally necessary in such cases.

Mankind

Mankind know not the danger of the case when great difficulty of breathing happens, and are alarmed at bleeding, which in some instances, particularly in plenitude, is the most rational remedy. The patient suffering under an *orthopnæa* must inevitably die, if the vessels of the lungs be not promptly depleted: bleeding is uncertain, and but a doubtful remedy; yet should be used in dangerous situations.

Bathing the legs with the gout baths, are useful. Antimonials to promote perspiration, and expectorants to raise expectoration, are necessary; but perhaps in some cases an emetic of two or three grains of *antimonium tartarifatum*, James's powder, or squills, or smart purging, may be useful; but must not be repeated, lest the stomach suffer more from the remedy than the disease. The lac ammoniacum, volatiles and squills in small doses, and properly administered, have their uses. Every thing bracing, astringent, or tonic, in this case should be carefully avoided\*.

\* The oil of anniseed to one drachm, mixed with solution of camphor and mucilage of gum arabic, has produced excellent effects as a diaphoretic.

*On the Management of gouty Patients in the  
Intervals of the Fits, &c.*

Amongst the variety of causes exhibited in the former part of the work, what have been most productive of the disorders, should be first impartially investigated, and, if practicable without injury to the constitution, should be avoided.

Though all narrow schemes, or very great and sudden changes of diet may be censurable and dangerous; yet gradual deviations may be instituted with great advantages.

*Less animal diet* and wine, or other liquors, may be very beneficial; in particular to those who have good appetites, strong digestive powers, and who use little exercise.

*Exercise* on foot and horseback, or in a carriage, if practicable, is adviseable: it agitates the viscera, promotes the secretions and excretions, &c.

Persons

Persons inclined to much study and a sedentary life should moderate their meditations, and if they write, should rather stand at a desk than sit. The immediate pursuits of study, especially if intense, after dinner are injurious. Morning is the time for meditation.

Those, who have drank wine, may, at times, and with judgment, make a change for malt liquors, not new nor flatulent;—porter is better than new ale, strong beer of a proper age is superior to small beer.

The *quantity* of liquids should be regulated by the portion of solid food taken: most persons *drink much more* than is necessary for health.

As gouty patients are generally nervous and irritable, whatever symptoms *valetudinarians* are subject to, will be found fully described and treated on, in the work on those subjects, to which they are referred.

All young people subject to the gout, or whose ancestors have laboured under that disorder, should *avoid suppers*, if liable to fullness, and make *light dinners* twice a week or oftener.



*Costiveness* should always be prevented by the gentle opening medicines according to constitutions. For this purpose *lac sulphuris* or *calcined magnesia* in ginger tea, or some light aloetic should be frequently taken :— the former have infallibly cured many chronic rheumatisms, and have done great wonders in relieving, though not in radically curing, arthritic complaints.

The *dry skin* should be prevented by light antimonials, as *James's powder*, occasionally taken, or two or three grains of the *antimonial powder* may be blended with *Rufus's pill*, which seems similar to *James's pill*, and given twice or thrice a week : by these and such remedies a dry skin is often removed and costiveness prevented. Tea and such watry drinks should be used sparingly, as they relax the tone of the stomach.

If analogous reasoning on many facts might be permitted in treating the gout, what has cured the chronic rheumatism, and hip gout under my own direction, might bid fair to answer important purposes, if long continued, which is the following  
very

very weak solution: but I only deliver this as a rational hint, having not yet sufficiently experienced its efficacy in various arthritics\*.

R. Antimon. tartarifat.

Hydrargyri muriati āā gr. j. solve in

Aq. rosar. ℥viiij. cujus sumat. ℥ss. exacte in coch. iv.  
infus. assafr. vel decoct. rad. sarsaparillæ mane et nocte.

*Plummer's pill*, to one grain morning and evening, might be long continued on the same principle, but it is seldom well prepared, as the ingredients require at least twelve hours rubbing.

To those who cannot, or do not, approve of the foregoing, the following light alterative, long continued, might prove very advantageous:

R. Hydrarg. sulph. rub. ʒvj.

Pulv. e tragacanth. c. ℥ss.

— sal sodæ ʒij. M. accurate, f. pulvis dividendus  
in xvj. partes quarum sumat j. mane et nocte in  
coch. ij. aquæ menth. pip.

The *aqua mephitica alcalina*, joined with bitters, might, if for years continued, bid fair to remove the causes of the gout.

\* The *bip gout* has been often cured by this remedy, with or without the baths, both in private practice and at the St. Mary-le-Bone Infirmary, as likewise by very small doses of calomel and pulvis antimonialis, &c. &c.

*Borax*, in very small doses, with bitters, might prove beneficial.

*Borax* dislodges the inspissated mucus on the tongue in fevers, its particles intimately dissolved in aqueous menstrooms and much diluted might enter the lacteal system with the chyle, and assist in disuniting the gluten that so predominates in the gout.

The *spongia usta*, the *fossile* and fixed *alkaline salt*, the *Æthiops vegetabilis*, and such like remedies in very small doses with bitters, under judicious management and long continuance, might prove very beneficial: but few gouty patients have sufficient patience and resolution to persevere in any plan, the least likely to prove a radical cure, even, when the disorder be recent; when inveterate, little success is to be expected. These are only to be, in general, considered as useful hints; for my own experience has not hitherto determined their absolute utility; a long time is requisite to enable a practitioner to speak decidedly; the observations of numbers can only confirm any doctrine.

Flatulent diet, beans, pease, sallads, and greens, especially the last, unless stewed,  
are

are improper ; as likewise philberts, walnuts, chesnuts, &c., fruits, tarts, &c. : for these are liable to create flatulency, and cholicky complaints, vomitings, &c., in the gouty stomach. If they have been imprudently eaten, and great coldness and violent pains in the stomach and bowels follow, with swelling and inflation from air or wind, an ℥iss. of tincture of senna, ℥ivss. of simple peppermint water, and ℥ij. of *calcined magnesia*, should be mixed together, and two table spoonfuls should be taken every hour or two until the bowels be opened, the wind corrected or expelled, and the pains, by thus removing causes, eased.

Carminative clysters, with oil and *tinctura sacra*, are proper.

After the bowels have been opened, then cordials and volatiles will be proper, and in some cases a light anodyne may be added.

The feet and legs of persons subject to the gout, as likewise the whole body, should be kept warm ; for these purposes nothing can be more useful than the *fleecy hosiery*



*hosiery* in autumn, winter, and spring, in our mutable climate; in the summer callico waistcoats or shirts under the linen will be eligible. I have known both the gout and rheumatism greatly relieved by an attention to *warm cloathing*. In the latter disorder the baths have proved very efficacious, as likewise in the *sciatica*, or *hip gout*, as it is called.

*Lime water* and bitters are proper where acidities abound; *Seltzer water* where they do not.

The afflicted, through the misery they suffer, the ill success of whatever they attempt, the base impositions practised on them by medical adventurers and imposture, all contribute to shake their faith, from which reason they submit to more misfortunes than they otherwise might experience. If they would rest satisfied without expecting a radical cure, by attempting which many have *lost their lives*, and would they pay strict attention to proper well conceived diet, with the use of very *little* and *gentle* medicine, I am certain, their miserable pains might be much mitigated, and their lives rendered  
more



more comfortable.—These are the principal sentiments, at present, I have to offer on a disorder that has, in all ages, and probably will frequently baffle the acutest penetration and longest experience in physic: the reasons of which have been amply discussed in different parts of this treatise, to prevent, if possible, in future, many gross impositions. The primary object in medicine should be to cure disease; the secondary to discover the true causes of its difficulty or impossibility. This knowledge is the real distinction that characterises rational medicine from uncertain and irrational empiricism \*.

\* Amidst a number of impositions that might be produced, *Le Fevre's* claims the preference as an ingenious contrivance to raise money under delusive pretensions. This genius had a subscription opened amongst the gouty of one hundred guineas each, and by the *first subscription* actually acquired five thousand guineas. If I recollect right, a second subscription was opened, to which many subscribed; then the artist moved off, under pretence of going to Germany to prepare his powders, but never returned, leaving his gouty patients to reflect on their credulity, without any mitigation of their disorder.

## THE CONCLUSION.

THE whole that has been advanced is submitted, with the greatest respect, to professional consideration: learning and candour will perceive the difficulty of producing satisfactory ætiological facts, or deductions by reasoning on a disorder so abstruse, various, and contradictory in its appearances in different subjects. What is here produced, however, may be a spur to others, and new experiments may be added, which may not only more satisfactorily explain the nature of the disorder, but discover new remedies either to prevent the causes or remove the present defects in the cure. I shall myself, at all opportunities, ardently prosecute this and every other medical object worthy of attention: it is a tribute justly due to the public and learned, for their favourable reception of the Treatise on Female and Nervous Diseases, and other works, as likewise for the confidence many years enjoyed as a medical

practitioner. All that the author requests is, that a candid perusal of the theoretical doctrines contained in the book, and a fair and impartial trial may be made of the baths, and other modes of treatment recommended ; for time and proofs alone can determine on their merits or defects. They should be accurately and impartially scrutinised by those who are versed in all the latest modern discoveries, and not censured by those injudicious critics who have neither time nor inclination to make themselves masters of the subject, and whose knowledge extends little farther than the great Boerhaave's system.

The afflicted, it is hoped, will not be deceived by *false alarms*, nor diverted by prejudices from attempting the relief of their miserable disorder. It is presumed, that these attempts to relieve human misery will not meet unmerited opposition from those who should promote the welfare of society, and who ought to adopt whatever is rational and unreservedly communicated. To oppose useful doctrines, without due reflection and fair trials, because they are *new*,  
 O is,

is, to inhumanly deprive the afflicted of even a probability of relief. Such conduct, under the delusion of whatever specious pretext, ought to be reprobated by all learned and honourable men: it shuts the door against the free discussion of an art at present imperfect; tends to discourage study and industry in making discoveries, and proves a check to all intended medical improvement.

THE END.